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ABSTRACT

Visual thinking has been neglected with the increasing emphasis on verbal and analytical skills. There is a need to provide balance in curriculum content and instructional evaluation related to visual imagery skills. In order to draw upon students' diverse talents and thinking capacities, educators must honor and respect alternative thinking and learning styles. Support and encouragement of visual thinkers is needed from preschool through adult years. The study of material culture as a context for both visual and verbal language learning is important in social studies and the fine arts. A review of literature provides an overview of what researchers in education, anthropology, psychology, and art education have found most significant regarding visual thinking. The issue can best be explored from a cross-cultural and cross-disciplinary perspective. The power of art and community to present symbols and metaphor is explored from a philosophical and biological viewpoint. Research suggests that shapings are the key to understanding child art, and that the human brain spontaneously comprehends visual stimuli. Differences between scientific and artistic approaches to qualitative research are enumerated. Photography provides a means of gaining insight into material culture and the relationships reflected by that culture. An exploration of visual thinking in three different cultures through a qualitative research methodology is proposed. Preschoolers and adult artists from Navaho, Pueblo, and Anglo cultures would be observed, interviewed, and photographed for a year. The research project would seek to discover how each creator arrives at individual meaning within the cultural context. (Contains 22 references.) (DK)

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# Doors and Windows of My Mind: Thresholds of Visual Thinking

by
Suzanne S. Monroe

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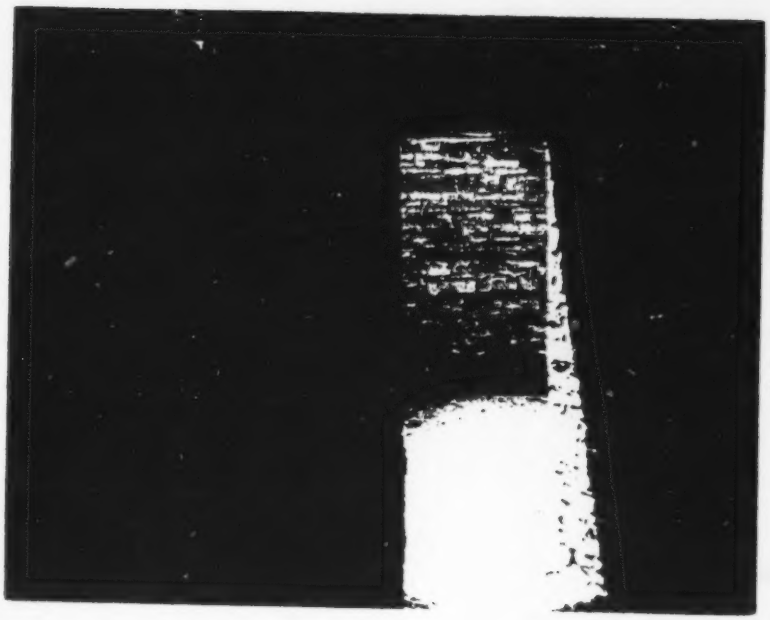

"Prehistoric Passages" Chaco Canyon
9/2/84

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"I had discovered a quality of transparency, both in the writing and in the imagery.... this realization helped me to affirm one of my impulses as an artist--to make my work subject-matter oriented (while still being abstract) and to try to reveal intimate emotional material through my forms."

--Judy Chicago
Through the Flower, p.175

"Inspirations and Influences"

I have been inspired and influenced by several graduate professors who have expressed either personal or professional interest in "Visual Thinking" during the past three years of my doctoral program.

I was first inspired by Dr. Vera John-Steiner, Professor of Linguistics and Educational Foundations at the University of New Mexico, Albuquerque. An early supporter of my initial writing efforts, Dr. John-Steiner encouraged my doctoral program pursuits, and more recently shared ideas on "visual thinking" in her publication of Notebooks of the Mind (1985). My exposure to her writing and lecturing about both "visual thinking" and "verbal thinking" has propelled me along an exciting and challenging path!

My next inspiration was provided by Dr. Virginia Richardson-Koehler, Professor of Education in Teaching and Teacher Education at the University of Arizona. A noted researcher and publisher, Dr. Koehler's in-depth commitment to and support of qualitative research methodology provided encouragement for me to pursue projects of more descriptive and naturalistic design. During two semesters of her classes in "Investigations in Elementary Education" and "Qualitative Research Seminar", she supported my interest in "visual thinking" and encouraged me to become more familiar with qualitative research methods. Dr. Koehler's patience and mentoring allowed me to take the risk of exploring my own process and enabled me to more fully explore the research efforts of others--both rather time-consuming experiences!

Dr. Barbara Babcock, Professor of Indian Studies and Anthropology, contributed to my experience by sharing her knowledge and sensitivity to oral-visual tradition, issues of gender and culture, and cross-cultural research in Anthropology and Folklore. She inspired my research in material culture and encouraged my using photography as a tool for cultural inventories.

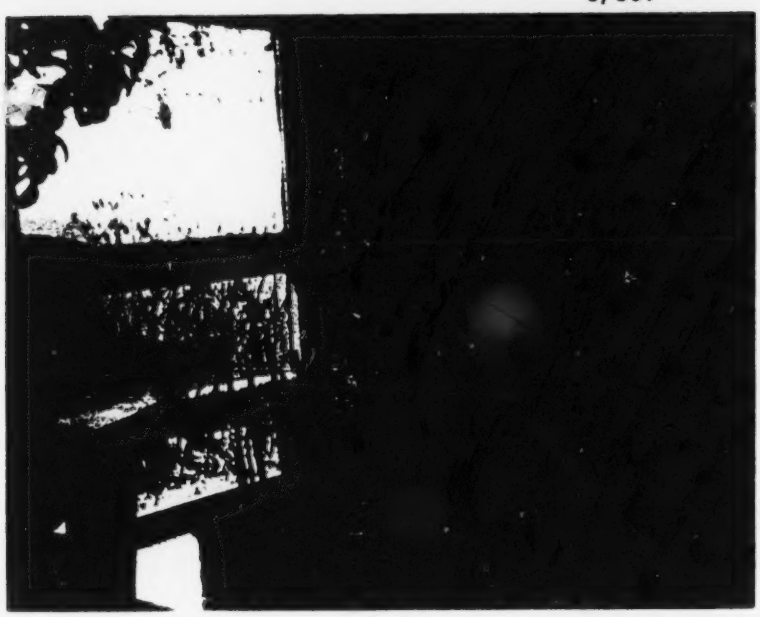
Dr. Yetta Goodman, Professor of Education in Language, Reading and Culture, provided personal mentoring for all my writing efforts and

professional support for my ideas on "visual thinking" as it relates to children's print awareness, and more importantly, to the developing relationship between early drawing and writing.

The largest influence for my continuing work in photography came from Dr. Warren Anderson, Professor Emeritus of Art Education and Environmental A esthetics, and Carol Weinstock, professional photographer and Anthropology Professor of "Social Documentary Photography." Their University of Arizona lectures and professional mentoring allowed me to use photography as a tool for documentation of social and cultural values as well as political issues. They both encouraged me to take my visual work more seriously. Dr. Anderson's slide documentaries of highways and cities inspired me to make social statements through artistic endeavor. Carol Weinstock's extensive documentation of people around the world influenced my search for visual patterns and cultural nuance.

I am happy to acknowledge the influence and inspiration provided by each of these individuals. Because of their mentoring, I have been able to reach this point of focus in my own "visual thinking" process!

"View from my writing table" Santa Fe
3/86.



"Looking up from writing..." Santa Fe
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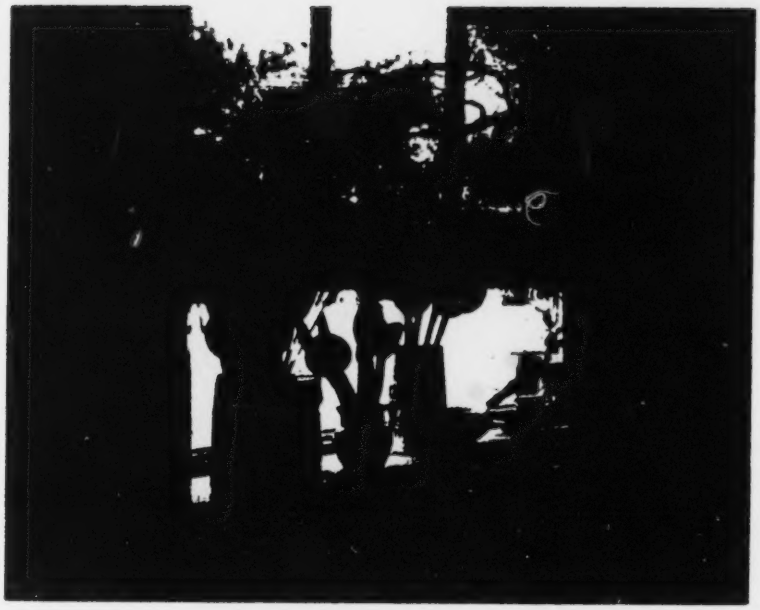
"Visual Thinking"--My Own Process

"Visual Thinking" represents a very broad concept, one which has been approached from cross-cultural and cross-disciplinary perspectives by artists, anthropologists, psychologists and educators--among others. Professional ethnographers have suggested that the qualitative researcher's goal is to decide what is significant enough to study, and then to focus on a particular dimension or aspect of experience. This narrowing of focus for me has been both challenging and frustrating!

During the past four semesters, I have pursued reading and review of research literature in four basic areas: language and thought, vision and thought, culture and gender, and qualitative methodology. At the same time I have completed individual research pilots utilizing photography as a tool of "visual thinking." In all of my projects, I have been fascinated with the historical continuity of creative expression within a particular cultural context. I have pondered how "visual thinking" develops within individuals, and how it is perpetuated and preserved within the individual's culture.

More importantly, I have wondered how "visual thinking" develops in young children, and in what specific ways it is nurtured by significant others and the natural environment. Which personal qualities and life experiences are essential for thought and visual expression? What is most needed for this mode of thinking and expression to survive into the adult years?

In observing my own creative process, I have discovered that I rely heavily on visual images as a means of expression. In this paper, I have used a format of both visual and verbal "vignettes." I have also attempted to describe my own process and to summarize the outstanding contributions of other visual thinkers. My proposed research design reflects an effort to study the development of "visual thinking" in young children, and to study the continuing nurturance and expression of "visual thinking" in adult creators.



"Sanctuary--view from the sink" Santa Fe
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"Pieced Patchwork: A Hidden Dimension
of My Great Grandmother's Life."

In my first effort toward visual research, I began with the primary visual expression most often used by women in my cultural and familial heritage: the patchwork quilt. I was familiar with this artistic format because of the interests and involvement of my mother, grandmother and great-grandmothers in quilting. As a small child I attended a quilting bee at my grandmother's home; and in my own parents' home, the quilting frame was often set up on the basement floor or attached to the ceiling. In the 1970's I began collecting quilts and coverlets--a few here and there, and found myself trying to search out a quilt's history.

According to feminist research, the quilt provides a prolific and consistent visual metaphor of women's lives. Quilts as a whole are reflective of a particular "world view" and represent "shared meaning." They are "symbolates" of historical events, political views, religious beliefs, social values and major life events of birth, baptism, weddings and death. Not just a public representation of the social-political times, quilts are also a private presentation of women's lives. Early quilts were almost exclusively the handwork of women, and were most often displayed in the bedroom or stored in trunks. It was in a family trunk that I found my great-grandmother's quilt, and discovered its "story."

"Casa Antigua: The House as a Reflection
of Personal and Cultural Identity."

Recognizing quilts as a unique visual format for women of Anglo-Saxon heritage, I was curious to see if there were any generalizations across cultures. My focus became the adobe homes of Northern New Mexico; specifically, Santa Fe, Las Vegas and Anton Chico/La Loma. It was in the latter rural village that I discovered not only the absence of quilts ....but the presence of home altars.

In the home of Marta Marquez, I found several altercitos--in the drawing room, or sala, as well as in all bedrooms. The artistic bricolage of her altar creations was incredible! Included in these visual displays were santos, religious icons, family photographs, memorabilia, dried flowers, candles, growing plants, and rosary beads.

In my review of literature to substantiate this particular art form, I found that the Mexican American home altar exemplifies "femmage"--which is the process of collecting and creatively assembling odd or disparate elements into a functional whole piece. The altar-maker assumes a formal degree of creative independence in assigning highly personal and unusual symbols to the altar. She maintains a woman's tradition in a male-dominated religious system. Cross-culturally, the altar-maker is alive and well in households in New Mexico, Texas, Mexico, Guatemala, Spain, Greece, Southern Italy, California, New Jersey and New York. In all of these settings the same set of relations among materials is visibly present. The assemblage of visual images is both a <u>public</u> and <u>private</u> presentation, and each altar-maker tells her own story!

"Santa Fe Revisited: Symbology
And A Sense of Place."

Moving from the privacy of bedroom and home to the more public space of community, I photographed the oldest and most historic districts of Santa Fe, New Mexico. This research project was prompted by my continuing interest in the artistic process, qualitative research, cultural symbols, and the ways in which "meaning" and a "sense of place" are communicated through the built environment, particularly through public art and architectural detail.

Santa Fe's symbology is unique! Amidst adobe pueblo and territorial architecture are various symbolizations--the most obvious being the Christian cross or crucifix; as well as blue trim, painted tiles, Pueblo pottery, Navajo silver and turquoise, Spanish lace curtains, red chili ristras and prolific wall murals on barrio homes and public buildings! The city is eclectic in heritage, language and visual delights. In essence, Santa Fe is an environmental archive, preserving stability and diversity through the repeated use of valued symbols and "shared meanings."

"Doors and Windows of My Mind"

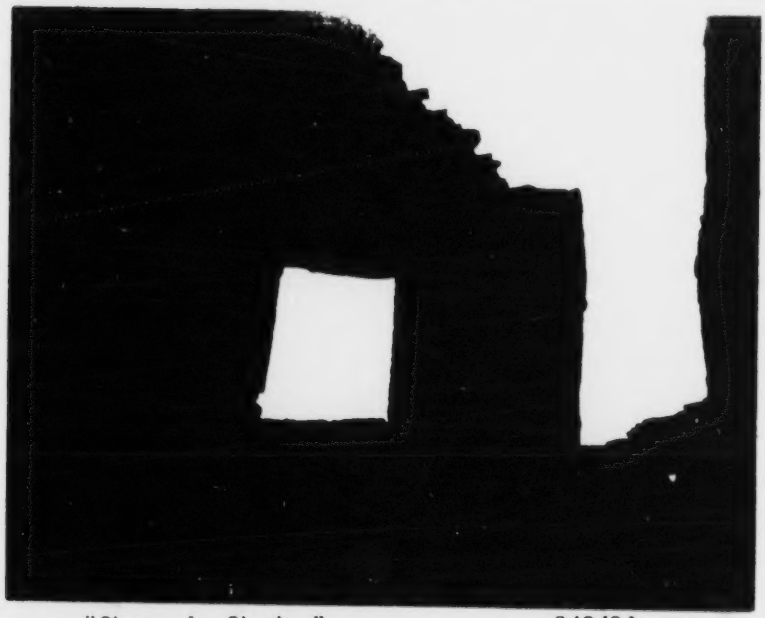
This idea has been several years in the growing! I have entertained a fascination with the historical and cultural aspects of the built environment since early childhood. More recently, I have struggled with my own photography as a format for "telling a story." In this particular piece of my personal "femmage" I have used both visual and verbal modes to express my thinking. It is my best effort to convey and articulate the "images of my mind."

Throughout this paper are included "visual images," which I have captured on film during the past few years. Photographing architectural symbology, and especially doors and windows of New Mexico has been a longitudinal project! In 1980 I was first fascinated with the blue and blue-green trim of the many doors and windows--often called "protective blue." Later I discovered the double doors typical of northern New Mexico Spanish architecture, and eventually I began collecting images of the rock structures of Chaco Canyon, Mesa Verde and Aztec Ruins. I have chose particular photographs because convey a particular message or have a special meaning. These doors and windows tell a story!

"Open Passage" Taos
8/86

"The work of art bears the character of a sign. It can be identified neither with the individual state of consciousness of its creator nor with any such states in its perceiver nor with the work as artifact. The work of art exists as an 'aesthetic object' located in the consciousness of an entire community."

--Jan Mukafovsky
"Art as Semiotic Fact"



"Chaco in Shadow" 9/2/84

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"Implications for Education"

The area of "Visual Thinking" is a challenging one for research in education! First, because it is an area which has been neglected with the increasing emphasis on verbal and analytical skills. Second, because there is a need to provide balance in both curriculum content and instructional evaluation related to visual imagery skills. Third, because of the current trend of "Back to Basics" pressure in classroom instruction.

A persistent concern throughout my reading process and integral to my own visual projects has been the relationship of cultural influences on vision and thought, language and thought, and ultimately... on learning style. The research on learning styles is prolific in supporting the idea that individuals, within various cultural contexts, vary in the way they collect, process, synthesize and analyze information. Therefore, in order to draw upon students' diverse talents and thinking capacities, it is imperative that educators honor and respect alternative thinking and learning styles.

Many students who may not appear to be verbally articulate may be visually articulate. And for those individuals who are more expressive and productive as "visual thinkers," the support and encouragement of their experience is needed at an early age--from preschool throughout elementary and secondary school into their adult years.

Another aspect of educational instruction which has been neglected is the study of material culture as a context for both visual and verbal language learning. With the exception of work completed in Anthropology and Folklore Studies, there is little or no attention given to family or community material culture. Students can be encouraged to build a data base from artifacts, photographs, observations and interviews. Research of this nature is especially important in the content areas of Social Studies, History, Geography, Humanities and the Fine Arts. Those who are encouraged to study their family, community or region in this way develop an expanded sense of personal identity as well as cultural diversity.

The Review of Literature in "Visual Thinking" which appears in the following section is an overview of what researchers in Education, Anthropology, Psychology and Art Education have found most significant. Authors and philosophers have been quoted in those instances where their ideas and opinions have far-reaching implications for the visual mode of expression in the educational process of children and adults.

The whole issue of "Visual Thinking" can best be explored from a cross-cultural and cross-disciplinary perspective--for it is an issue of the mind...which is limitless!

Arnheim, Rudolf. Visual Thinking. Berkley: University of California Press, 1969.

A Critical Review: by Suzanne S. Monroe

In this classic and often-cited publication, cognitive psychologist and art educator Rudolf Arnheim analyses the split between sense and thought--suggesting it is the most probable cause of the current neglect of the arts in Western society and education:

> "The arts are neglected because they are based on perception, and perception is disdained because it is not assumed to involve thought. In fact, educators and administrators cannot justify giving the arts an important position in the curriculum unless they understand that the arts are the most powerful means of strengthening the perceptual component without which productive thinking is impossible in any field of endeavor." (p.3)

> "The neglect of the arts is only the most tangible symptom of the widespread unemployment of the senses in every field of academic study. What is most needed is not more aesthetics or more esoteric manuals of art education but a convincing case made for visual thinking quite in general. Once we understand in theory, we might try to heal in practice the unwholesome split which cripples the training of reasoning power." (p.3)

This powerful statement is the underlying assumption for the remainder of Arnheim's discussion--some 300 pages of highly analytical discourse on the subject of "visual thinking." In this publication, he attempts to integrate controversial philosophical positions regarding the sensual and the reasonable... imagery and intellect...perception and thought. His focus is limited to the sense of "sight" which he maintains is the most efficient organ of human cognition!

Arnheim's style is complex! The content of the topic is substantial! Without intention of slighting definition or conceptualization, however, I have chosen to focus my critique on those ideas which are most relevant to my dissertation "review of literature" and/or those which contribute most to an expanded understanding of the role of "visual thinking" in young children's artistic development, and the related emergence of writing.

Arnheim provides a lengthy historical overview of the developing "distrust of the senses." He acknowledges the early Judeo-Christian hostility against graven images, and also considers the sensualist philosophers who contend that nothing is in the intellect which was not previously in the senses. However, it is the Greek philosophers, according to Arnheim, who impacted most on historical developmental bases of logic and reasoning as opposed to sensual perception and artistic awareness.

The mistrust of ordinary perception marks Plato's philosophy profoundly. For him, the sensory images were dim reflections outside of the system of reality. He esteemed music becasue of its participation in mathematical order and unity, but he cautioned against the arts, particularly painting, because of the dependence on illusory images. Plato was undoubtedly the most vocal in his mistrust of direct vision and the immediacy of perception.

In contrast, Aristotle was more lenient in his definitions of reality and the character of perceivable objects. In his conceptualization of "universals" and "Particulars", Aristotle returned some dignity to the sensory experience:

> "Matter is that which matters...Aristotle asserts that an object is real to us through its true and lasting nature, not through its accidental, changing properties." (p.12)

Arnheim concludes this discussion with a profound summary:

> "The Greeks learned to distrust the senses, but they never forgot that direct vision is the first and final source of wisdom...in the world of Aristotle, 'the soul never thinks without an image.' "(p.14)

As a cognitivist, Arnheim is concerned with the relationship between perception and thought. He suggests that there may be good reasons for this split between seeing and thinking. However, he maintains that "...visual perception is visual thinking." (p.14)

> "The great virtue of vision is that it is not only a highly articulate medium, but its universe offers inexhaustibly rich information about the objects and events of the outer world. Therefore, vision is the primary medium of thought." (p.18)

Arnheim stresses that experiements in sensory deprivation have shown that unpatterned stimulation--diffuse light and steady buzz--is upsetting to the individual's mental functioning. To counteract monotony, the subject replaces the outer stimulation with imagery. The mind's need for, and ability to replace, missing stimulation is an argument for the senses as being primary to the healthy functioning of the intellect.

In his chapter entitled "The Past In the Present," the author goes beyond direct perception to a discussion of mental imagery:

> "A perceptual act is never isolated: it is only the most recent phase of a stream of innumerable similar acts, performed in the past and surviving in memory...the influence of memory on the perception of the present is indeed powerful!" (p.80)

> "The most useful and common interaction between perception and memory takes place in the recognition of things seen. Visual knowledge acquired in the past helps not

> only in detecting the nature of an object or action in a visual field, it also assigns the present object a place in the system of things constituting our total view of the world." (p.90)

The author devotes nearly fifty pages to the biological and physiological aspects of vision and perception. Terminologies and definitions include depth perception. object permanence, pattern recognition, shape discrimination, concept formation, stimulus-response patterns, discrimination comparison, physiological optics--all terms reminescent of child psychology and cognitive development.

His approach is highly theoretical and clinical, although he provides ample reference to educational practice. Even though his overall concern is with artistic vision, he appears to draw upon experimental research in biology and psychology. Many of his examples are drawn from "perception" and "environmental perception" research.

In contrast, Arnheim's discussion of "Pictures, Symbols and Signs," leans in the direction of semiotics and meaning. However, he does not use these particular terms in his discussion. Instead, he concentrates on "images", and suggests that these three terms do not stand for kinds of images, but rather describe three functions fulfilled by images.

> "An image serves as a 'sign' to the extent to which it stands for a particular content without reflecting its characteristics visually...Images are 'pictures' to the entent to which they protray things located at a lower level of abstractness than they are themselves... An image acts as a 'symbol' to the extent to which it portrays things which are at a higher level of abstractness than is the symbol itself. A symbol gives particular shape to types of things or constellations of forces."(p. 145)

Arnheim elaborates:

> "A good modern trademark interprets the character of its wearer by associating it with sharply defined patterns of visual forces...Any design has dynamic qualities which contribute to characterizing the object. Simple shapes can evoke the expressive qualities of suppleness or vitality or harmony. This sort of evocation is indispensable in art." (p.145-47)

Arnheim's "notes" are an invaluable resource as he has included copious footnotes in reference to definitions, concepts and ideas. His "bibliography" of 313 sources (to 1970) has to be one of the most comprehensive in this area of endeavor. The advantage to the researcher is that this bibliography is interdisciplinary--drawing upon seminal works in math, biology, physiology, psychology, geometry, astronomy, geography, educational psychology and art education. To a lesser extent, he also includes sources from philosophy, linguistics and anthropology. In a sense, Arnheim has created his own "gestalt" in visual thinking--a functional configuration and synthesis of many related elements and experiences!

I am impressed with the author's knowldege of so many fields, and his capable way of synthesizing so many complex conepts. Conspicuously absent, however, is any reference to semiotics or to the elaborate complexities of sign and symbol systems, and to the issue of social and cultural symbology. Reference to "meaning" is more assumed than stated.

My main criticism of Arnheim's approach is that it represents a <u>scientific</u> treatise, and leaves the <u>artistic</u> dimension void and invisible. Although he refers to "context" and "world view" in passing, I'm not fully convinced that he places a very high priority on social and cultural values as related to his topic. I feel that he has virtually ignored the issues of <u>gender</u> and <u>ethnicity</u> is his discussion. It is these two areas that intrique me the most, and towards this end I will continue my research in "visual thinking."

"La Puerta de Azul" Mi Casa/Santa Fe
12/25/83



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"Review of the Literature"

In her recent ethnographic research with creative writers, artists and scientists, Vera John-Steiner notes that most of these individuals stress a reliance on visual symbols in their thinking.[1] She contrasts language, a highly conventionalized form of express, with visual images, a unique and non-standard form of expression. In Notebooks of the Mind (1985) she suggests:

> While language is a socially constructed and conventionalized mode of expression, no corresponding single visual language exists. There is, consequently, a great diversity of graphic and plastic means used by creative individuals in shaping and communicating their inner visual notions...The absence of a single visual language may assist in the discovery process. Images come rapidly and are changeable--and it is difficult to externalized them fully. However, these very attributes contribute to their effectiveness in the exploratory and playful combination of ideas.[2]

John-Steiner found from her interviews of more than fifty world-famous creators that the shaping of a visual language of communication is a slow, developmental process. In many cases, considerable time lapses between the early, impressionable years of stimulation and a mature, personalized form of expression. John-Steiner suggests:

> Many future artists search for varied visual stimulation long before they know why it is important for them to do so. During his own childhood in a small Western town, Brent Wilson developed a voracious visual appetite, which was hard to satisfy in a town lacking museums and galleries. He used to wait eagerly for Life magazine, 'his window to the world,' and pored over the photographs. Unconsciously, he realized at an early age that in addition to drawing from nature, young people need models and schemas to help them in their representational efforts.[3]

John-Steiner maintains that artists were enriched by the nurturance of parents, teachers and other mentors--this contributes to life-long openness to experience, intensity of vision, and ability to test boundaries of the known and familiar. Parents are particularly important for facilitating creativity through diversity and risk-taking.

She notes that these artists are committed to creating images that signify. The sources of their strong images include social and historic

dimensions of their lives as well as remembered sights. She reiterates other researchers' ideas of "shared meaning" within a community. According to John-Steiner:

> Painters, film-makers, and photographers, by relying upon the visual construction of thought, have given form to the volatile and stable feature of our world. Their work expresses the relativity of observations....In these ways they accentuate some of the shared sources of imagery that individuals born into the same culture have in common.[4]

> What, then, is visual thinking: It is the representation of knowledge in the form of structures; it is the flow of images as pictures, diagrams, explanatory models, orchestrated with schemes and structure of the mind...but productive thinkers use their stubborn patience to work with these images, to go beyond the representational function of visual thought..they find new thoughts hidden as metaphors in their reflections...[5]

John-Steiner Continues,

> 'To draw is to put down your thoughts visually,' remarked Fritz Scholder, the well-known Native American paointer. A similar comment was made by the photographer Diane Michener, 'I have always taken pictures the way other people keep journals and diaries. It is a way of ordering my reactions to the world, of placing my ideas and feelings in a concrete form outside myself, of breaking my isolation.'[6]

> In describing their approach to thought, these artists highlight an oft-ignored aspect of reflection, the visualization of ideas. The human need to order the flow of experience, to reshape it, or simply to remember it, requires a multiplicity of means, and among these, language and imagery are of particular interest. Both of these processes assist the individual in bridging the personal and social aspects of experience. In comparing the role of words to those of pictures, Michener illustrates this similarity of function.[7]

> Lanaguage is a highly conventionalized form of expression, but images--the constituent forms of visual thought--are hard to standardize or to define. There is no dictionary of images, or thesaurus of photographs and paintings. Imagery and visual expressions reflect the uniqueness of an individual's life.[8]

In his book entitled Visual Thinking (1969), Rudolph Arnheim regards images, rather than words, as the primary shapers of thought. He characterizes his idea:

> Visual thinking calls, more broadly, for the ability to to see visual shapes as images of the patterns of forces that underly our existence--the functioning of minds, of bodies or machines, the structure of societies or ideas.[9]

In his chapter on "Images of Thought," Arnheim notes:

> The kind of mental image needed for thought is unlikely to be a complete, colorful and faithful replica of some visible scene. But memory can take things out of their contexts and show them in isolation...the mind, we are told, can cut pieces from the cloth of memory, leaving the cloth itself unchanged. It can also make collages from memory material....[10]

This idea of impressions, filed as images in the mind, is prevalent in the literature. These impression-images are related to symbolizing expressions--signs, symbols and metaphors. Even though people have used metaphor for centuries, it has not been given the respect it deserves. Many scholars are now beginning to realize what Susanne Langer advanced in the 1950's: that the way we think is basically metaphoric, and that products of metaphoric thinking carry truth. Langer suggests,

> But between the facts run the threads of unrecorded reality, momentarily recognized, where they come to the surface...the bright, twisted threads of symbolic envisagement, imagination, thought-memory and reconstructed memory, belief beyond experience, dream, make-believe, hypothesis, philosophy--the whole creative process of ideation, mataphor, and abstraction that makes human life an adventure in understanding.[11]

According to Howard Gardner's reflections on Langer's work,

> The new agenda, the recently cut key of philosophy, consisted of a concern with all manner of symbols--words, numbers, and other abstract forms--and with the various meanings that underlie our dreams, fill our imaginations, and draw us to treasure works of civilization.[12]

> Langer posited a basic and pervasive human need to symbolize, to invent meanings, and to invest meanings in one's world. It was a property of the human mind to search for and to find significances everywhere, to transform experience constantly to uncover new meanings.[13]

> But the symbols wrought by the human mind were not all of the same sort and Langer found it necessary to distinguish two kinds...The first, called discursive symbolism, involved the expression of this idea in words or other kinds of language. Opposed to discursive symbolism is another, less understood variety which labeled presentational symbolism. Here an equivalent idea could be gleaned from a picture...For most readers the distinction between these two forms of symbols was the key concept of philosophy's "new key"...Langer broached the possibility of analyzing feelings, emotions, and other intangible elements of human experience through the public area of symbol analysis.[14]

> She saw a world in which language was lauded above everything; where the inner life was disparaged, ignored, even destroyed...In place of a philosophy that knows only deductive or inductive logic as reason, she proposed a theory of mind whose keynote is the symbolic function...She has carefully studied relevant humanistic and scientific texts and has not hesitated to tackle the grand topics--mind, feeling, art.[15]

Hermine Feinstein draws on Langer's work extensively, noting that she honors the subjective aspect of experience, and its metaphoric end products--the arts. Acording to Feinstein, on summarizing Langer's thesis:

> The core of her argument is that experience, to be understood and conveyed, must be transformed into symbols. Discursive symbolization describes experiences that are sequential; i.e., logical and rule-governed. Yet there are many experiences that are quite different: holistic, alogical and structure-seeking. Sometimes they are immediate, vivid, fleeting and fragmentrary. This felt aspect of experience, the subjective, defies discursive formulation. Because it is not possible to put certain aspects of experience into discursive symbolication, another class of symbolication is needed, one that is different in kind. Langer designates such a class--presentational symbolication.[16]

Feinstein notes that the artist is able to translate feeling into form by intense concentration on the potentialities for forms to symbolize feeling. The artists finds visual approximations for knowledge of feeling and renders them into visual form. She quotes Aristotle: "The greatest thing by far is to be a master of metaphor...it is also a sign of genius, since a good metaphor implies an intuitive perception of the similarity of dissimilars."[17]

Feinstein concludes:

> If art is interpreted mataphorically, it becomes a significant area of study, inquiry into complex symbolic activity. Such inquiry is long overdue because making and interpreting art have directly to do with thinking, which involves the construction of meaning, and the clarification and expansion of reality.[18]

Langer's and Feinstein's ideas about metaphor are elaborated by Bob Samples in The Metaphoric Mind. Samples suggests: "The metaphoric mind is a maverick. It is as wild and unruly as a child. It follows us doggedly and plagues us with its presence as we wander the contrived corridors of rationality."[19]

Samples claims that we have come to depend on the rational, analytical left half of our brain, and have lost touch with the deeper, more creative parts of our lives. He provides a powerful and rational argument for re-owning the mind of art, religion, and dream--in which all our inner capacities are honored and celebrated. According to Samples:

> Artists, poets, and playwrights are among those who have been credited with influencing cultural change. As history progressed, they usually became identified with left-handed knowing. Not surprisingly, the opposite was true for lawmakers, priests and technologists. Their stabilizing influence wedded them to the right and righteous mode. They were logical, predictable, and thus rational. It was with metaphor--with the arts--that ambiguity and deviance came. And with rationality came stability and logic.[20]

> The brain's left cerebral hemisphere is the model of right-handedness. It houses the organizing, logical, conforming qualities. It strings things together sequentially in language and in linear time sequences. And it worries a lot about the rules of reading, writing and arithmetic. It sees things discretely and its processes tend to converge toward the single most logical outcome in a series of thoughts.[21]

> The right cerebral hemisphere in most people is the residence of the metaphoric mind...When an idea comes into the metaphoric mind, a sudden rush of relationships flashed into being and the original thought expands rapidly outward into a network of new holistic perceptions. The role of metaphoric thinking is to invent, to create, and to challenge conformity by extending what is known into new meadows of knowing. The metaphoric mind treats all input as fragments of reality, and as soon as a fragment appears, the mind begins the search for the whole. Like an archeologist who discovers a shard, a tiny fragment of an ancient pot, the metaphoric mind at once begins to visualize the whole creation.[22]

Samples draws from other researchers as he compiles a list of the characteristics of metaphoric process: timeless, receptive, Gestalt, right hemisphere, nonlineal, diffuse, simultaneous, earth, feminine, Yin, space, intuitive, experiential, divergent thinking, presentational symbolism, multiple processing, subsidiary awareness, private knowledge...and metaphorical meaning. The diversity of this list emphasizes the variety of perspectives from which this issue has been viewed historically!

Howard Gardner, Co-Director of Project Zero with Nelson Goodman, is a reknowned student of creativity and cognition. Also a prolific writer and publisher, Gardner challenges the usual concept of intelligence, and argues instead for the existence of core abilities in Frames of Mind (1983). He is an advocate for right-brain, left-brain research, and implications for the fine arts in human psychological development. He supports educational experiences in which affective and cognitive competencies are united--contributing to the "Language of emotion".

In Art, Mind, and Brain (1982), Gardner notes the influence of prominent psychologists such as Jean Piaget, Jerome Bruner, Lev Vygotsky and Alexander Luria. He also pays tribute to linguist Noam Chomsky and Anthropologist Claude Levi-Strauss, the latter providing..."a link to a second group of masters--Ernst Cassirer, Susanne Langer, Nelson Goodman and Ernst Gombrich--who embraced a cognitive or, more precisely, a symbolic approach to the arts and who provided many clues about how to conduct a psychological study of the artistic process."[23]

Gardner emphasizes,

> I have adopted the conviction that each artistic symbol system merits separate inquiry....I have become convinced of the importance of exploring artistic mastery from as wide a set of perspectives as possible.[24]

One of the most appealing aspects of Gardner's research is his concern with the visual thinking and artistic expression of both child and adult. He has completed many case studies concerned with individual difference in early artistic symbolization, the most important of which are included in Artful Scribbles (1980) and Early Symbolization (1979). In these publications, Gardner addresses the earlier work of Rhoda Kellog and Carl Jung and acknowledges the "mandala" and "unconscious artistic behavior." He goes beyond these concerns in his search for deeper, more pervasive developmental processes in young children. Gardner finds some striking patterns among his subjects:

> Some were inveterate verbalizers; in seeming indifference to the stated task, they produced copious amounts of language. Whether asked to tell a story, act out a scene, or fashion a clay figure, their response was likely to be an extensive narrative, perhaps featuring different voice parts, marked by only minimal action or visual-spatial operations. Other subjects were committed visualizers; though they certainly could talk, they did so reluctantly and minimally. Instead, they would plunge directly into

drawing or building, exploring the possibilites with startling effectiveness, offering linguistic comments only sparingly.[25]

Gardner concludes:

> A highly individual and readily recognizable set of identifying marks seems to manifest in the miniature artistic efforts of the preschool child....If our preliminary study is any guide, researchers will eventually have to take into account the child's native endowment and predilections (including the structure of his brain), the predominant practices of his culture, the particular demands and expectations of his family, the availability of various production media, the particular tasks posed, the interaction of the child's level of symbolization, and current preoccupations and motivations during the occasion of symbolication. This is an ambitious program, particularly in view of the still meager tools and analytic powers of researchers interested in these questions. Yet even the ability of researchers to define with some precision questions of early artistry and symbolization represents progress. [26]

Several studies are of historical and cross-cultural significance in the area of children's "visual thinking" and symbolization. Among the more outstanding is the classic longitudinal study completed by Gertrude Hildreth in 1941. In her publication of Child Mind in Evolution, Hildreth includes hundreds of drawings of trains, all drawn by one young boy. She was not involved in the process, but only concerned herself with the products, or documents. Hildreth concluded that children use drawing primarily as a graphic language, and as a means for interpretting their thoughts. She also noted the evolving aspects of writing in the drawings, and concluded that with age and conceptual maturity, the child makes a transition between symbol systems.

Rhoda Kellog has compiled extensive cross-cultural documentation of children's artistic expression. In her publication of Children's Drawings, Children's Minds (1979), Kellogg presents a collection of drawings from 1948-1970, organized by age-level sequences and in titled groupsings. Emphasis is on international drawings of preschoolers. She notes the patterns of "mandala" and "sun" hands and faces. Collecting art from 30 foreign countries, she concludes that scribbling is the best mental preparation for children learning to read easily and well by age six. Her research suggests that shapings are the key to understanding child art, and that the human brain spontaneously comprehends visual stimuli.

Anthropologist Alexander Alland conducted cross-cultural research in six different settings: Bali, Ponape, Taiwa, Japan, France, and United States. He hypothesizes that although children's drawings may conform unconsciously in many ways to cultural conventions, what children do basically is play with form and let the process itself take them away. Alland documents his findings in Playing with Form: Children Draw in Six Cultures (1983). Children were photographed and filmed in the process of making pictures. Alland maintains that the communication function so often appears in art suggests a parallel between artistic and linguistic development beginning with scribbles...a kind of babble with visual forms.

In each of these studies, whether longitudinal casestudies or cross-sectional populations, the researcher is concerned with children's efforts to give form and substance to their visual images...to "visual thinking." And all are looking for the significance or meaning in the process as well as the product. This quest for meaning is an over-riding concern of cultural anthropoligists, among other. Barbara Babcock, a scholar of Visual Anthropology, suggests in her 1985 publication of "Artifacts," that human evolution is characterized by parallel development in both linguistic and artistic meanings, yet social scientists have been more concerned with the meanings of words that with the meanings of things. According to Babcock:

> Psychologists, sociologists, and symbolic anthropologists as well as folklorists and archeologists are re-viewing the things with which we fill our lives and demonstrating that they are interpretations, objectifications or materializations of experience; that artifacts are indeed repositories of significance, both embodying and collecting cultural meanings, and that 'objects speak.'[27]

Babcock maintains that works of art are primary documents for "reading" a culture, and that the central connection between art and community life is a semiotic one. She has expressed both in lecture and publication her theory that in every culture there exist key ideas, or organizing concepts. These are then expressed in different aspects of the culture, but particularly through art because of its power as a sign and symbol system. As evidenced in her most recent field work with Cochiti Pueblo potter, Helen Codero, Babcock's research is theory-driven, based on her semiotic premise that basic ideas and patterns are expressed visually throughout a given culture.

John-Steiner summarizes the ideas of many researcher's in these concluding statements:

> Through these varied languages of thought, the meanings of these experiences are stored and organized. The choice of such a language, or inner symbol system, is not always a conscious one. It is embodied in the history of an individual, beginning with his or her efforts at reflection that first developed in childhood. [28]

> Thought is embedded in the structure of the mind. One way to think of this structure is to view it as formed by networks of interlocking concepts, of highly condensed and organized clusters of representations. Some of these concepts are pulled rather easily into consciousness, while others become accessible only when an individual, confronted by new challenges, conjoins and transforms inner thoughts into overt and communicable forms that can be shared.[29]

> ....I ask once more, 'what is thinking?' To think, it seems to me, is to hold an idea long enought to unlock and shape its power in the varied contexts of shared human knowledge. There are differences among human beings in their willingness to pursue and hold the power of ideas, and it is within this domain that the similarities and differences between thought in its mundane and creative forms may live.[30]

> The full realization of generative ideas requires a sustained, often painful, dialectic between condensed inner thoughts and realization. In the course of resolving such tension, the poet and novelist May Sarton has writen 'tension between idea and image has to do with the depth and complexity of the image....The problem of course is to keep one's excitement, not to lose the zest in the process...' [31]

"Adobe Doorways" LaLoma
4/84



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"Qualitative Research Methodology"

Expanding on the characteristics of the metaphoric process, Elliot Eisner comments "On the Differences Between Scientific and Artistic Approaches to Qualitative Research."[32] Eisner discusses ten dimensions of difference between the two approaches to research:

1. The forms of representation. The artistic approach is visual, poetic and metaphoric rather than literal, formal and quantifiable. The artist discovers "meaning" through the creation of evocative forms.

2. The criteria for appraisal. Scientific research is always concerned with questions of validity, whereas in artistic research canons of test reliability and sampling do not apply. Validity in the arts is the product of the persuasiveness of a personal vision.

3. Points of focus. Artistic approach is intuitive as opposed to the statistical approach in science. The former is more concerned with "meaning" than behavior.

4. The nature of generalization. Scientific methodology requires random sampling whereas, artistic methodology sheds light on what is "unique" in time and space--thus making the particular vivid.

5. Role of form. In artistic approaches standardization of form is counterproductive; in scientific approach, standardization of style is valued.

6. Degree of license allowed. Scientific approach is ruled by objectivity, and artistic approach is ruled by subjectivity. Inventiveness and creative interpretation are expected in the arts, whereas factual reporting is expected in the sciences. New genre designated as "faction"--the marriage of fact and fiction.

7. Interest in prediction and control. Scientific research aims at production of ideas that will enable us to anticipate the future, if not control it; artistic research is often explication and discovery.

8. The sources of data. In scientific approach, standardized methods of data collection are central; in artistic approach, they are marginal.

9. The basis of knowing. Artistic approach is characterized by methodological pluralism as opposed to monism of scientific approach. The former employs "intuition" as opposed to "logical positivism."

10. Ultimate aims. In scientific approach, the aim is discovery of truth (single monopoly); in artistic approach, the aim is discovery of meaning (diversity).

Eisner conlcudes that in education particularly the problems need to be addressed from diverse perspectives. He suggests the artistic approach not as a rejection of the scientific but rather to provide for "binocular vision."[33]

This sensitivity to "meaning" has been included as an essential concern of qualitative research in the work of Robert Bogdan and Sari Knopp Biklin. In their publication of Qualitative Research for Education, they note five major features of qualitative research:[34]

1. Natural setting where the researcher is the key instrument and there is a direct source of data.
2. Research is descriptive rather than controlled or experimental
3. Qualitative researcher is concerned more with process than with product.
4. Qualitative research data is analyzed inductively--from bottom up.
5. The discovery of "meaning" is the essential concern.

Bogdan and Biklin have included various methodologies in qualitative research, among these being photography as a tool for social documentation. They have expanded on photographs as conveyors of meaning--both those taken by the researcher, and those found by the researcher. These authors are sensitive to the visual image, its evocative format, and its potential for providing information. Their publication includes extensive photography of historical and social significance.

A third and final source pertinent to the topic of "Visual Thinking" is Visual Anthropology: Photography as a Research Method by John C ollier and Malcolm Collier. The authors are concerned with visual observation and the insights that can be gained through the use of the camera. One of the more outstanding chapters is entitled "The Cultural Inventory." According to Collier and Collier:

> A cultural inventory can go beyond material items to become detailing of human functions, the quality of life, and the nature of psychological well-being. The photographic inventory can record not only the range of artifacts in the home but also their relationship to each other. The style of their placement in space, all the aspects that define and express the way in which people use and order their space and possessions. Such information not only provides insight into the present character of people's lives but can also describe acculturation and track cultural continuity and change.... the valued of an inventory is based upon the assumption that the "look" of a home reflects who people are, the way they cope with the problems of life.[35]

> The content and organization of a home is usually a reflection of its inhabitants that, if read properly, can give considerable understanding of the people themselves....an inventory not only deals with material content, it also records arrangement and use of space. The spatial configuration of otherwise ordinary objects, common to a mass society, may often reflect or express the cultural patterns and values of distinct cultural groups or may provide insight into the well-being of the inhabitants.[36]

The authors also review two cultural inventory projects utilizing photographs, questionnaire and interpretive description. They stress the importance of the inventory process with subcultural groups within larger societies. Collier and Collier conclude that photographic inventory remains a potentially rich and largely untapped use of photography in cultural explorations...of style, maintenance and change!

From the preceding "review of literature", I have expanded my perspective of other researchers' questions and methodology. My specific questions about "Visual Thinking" are related both to child and adult development and expression, and are articulated in more detail in the next section.

"El Zaguan" Canyon Road
12/25/83.

" Across Canyon Road" Santa Fe
12/25/83

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"My Research Questions"

1. What is "visual thinking"? How is it developed? How is it expressed? How is it nurtured?

2. How can "visual thinking" be measured?

3. How does "visual thinking" affect learning style or teaching style?

4. In what specific ways is "visual thinking" nurtured by significant others and the natural environment? How do culture and gender influence this nurturing?

5. What do child and adult artists attend to in their environment?

6. How do child and adult artists express their ideas visually?

7. How do child and adult artists express these same ideas verbally?

8. How is the visual thinking process supported and the products preserved within a particular familial and cultural setting?

9. Which personal qualities are most essential for "visual thinking" as expressed by children?

10. What is most needed for this mode of thinking and expression to survive into the adult years?

"Proposed Research Design"

My approach to research methodology would be a qualitative one in which I observe both child and adult artists in the field for at least one year. I would complete regular observations of "visual thinkers" in process, collect their artistic products, and conduct interviews on tape and film--all in the natural settings of home, school, neighborhood and/or work community. My sample would be small, indigenous and reflective of the diverse cultural heritage in the Southwest.

It will be important to allow 1-2 months for a preliminary pilot in order to check out the significance of the questions in relation to the sampling, and also to evaluate the appropriateness of methodology. I would begin with one child and one adult in each of the various natural geographic settings.

Adults and children would be observed by the researcher, filmed, photographed and taped. From this pilot, the questions as well as methodology would be evaluated and refined. This preliminary period is also essential in establishing rapport with individuals, families and communities. Any technical problems with visual or sound equipment can also be ascertained.

I would select a small sample so that most of the research time and energy would be applied in depth rather than breadth. A basic sample of six young children and six adults would provide sufficient data in relation to the research questions. A one-year period of data collection would provide more depth. I would try to balance cultural and gender diversity at both the child and adult levels. The sample of young children will provide data for early development of "visual thinking", and the sample of adults will address early development as well as nurturance into adult years.

The sample of children will consist of six preschoolers, ages 4-5, from three distinct cultural backgrounds: Navajo (2), Pueblo(2) and Anglo(2). Observation will include bi-weekly visits for at least 2 hours duration with each subject. The purpose would be to observe "visual thinking" in process as children engage in drawing, writing and talking. I would interview them regularly, as well as photograph or film the children in their natural settings of home, neighborhood or school. The sample would be drawn from Head Start or Kindergarten students in Rio Grande School, Santa Fe; San Ildelfonso Day School, Espanola;and Toadlena Boarding School, Two Grey Hills Chapter.

The sample of adults will consist of six adult artists--weavers, potters and photographers--who will be observed, interviewed and filmed and photographed at various intervals during a one-year period. Possibly the best approach will be to spend one week in-depth with each adult as they are engaged in creative thought, work and play. These weekly observation-interview periods would be conducted once each quarter during the year of field work. The sample would be drawn from Two Grey Hills Chapter, Toadlena (2 weavers), San Ildelfonso Pueblo (2 potters), and Santa Fe (2 photographers).

Children and adults from the matched community settings will be observed by the researcher; and also interviewed, photographed, filmed and taped. The most important aspect of the research methodology is documenting the process as well as the product of "visual thinking"...and how each creator arrives at her or his individual "meaning" within the cultural context.

"Data Analysis"

I will analyze the data from cumulative written notes, taped interviews and visual documentation. Because the data will be naturalistic,the analysis will be descriptive rather than statistical. Data will be analyzed inductively, from the bottom up. Because the emerging data will determine the ultimate categories and significance, it is impossible to propose in advance a more complete methodology for data analysis. Finally, data will be formalized into narrative and photo-documentary format. Undoubtedly the ultimate presentation will be highly visual!

"The key is in remembering,
in what is chosen for the dream.
In the silence of recovery we hold
the rituals of the dawn
now as then."

--Paula Gunn Allen
The Sacred Hoop

"Anton Chico Rose" 4/84

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"Notes"

[1]John-Steiner, Vera. Notebooks of the Mind. Albuquerque: University of New Mexico Press, 1985.

[2]Ibid, p. 87.

[3]Ibid, p. 89.

[4]Ibid, p. 108.

[5]Ibid, p. 109.

[6]Ibid, p. 83.

[7]Ibid.

[8]Ibid.

[9]Arnheim, Rudolf. Visual Thinking. Berkeley: University of California Press, 1969. p. 315.

[10]Ibid, p. 104.

[11]Langer, Susanne. Feeling and Form. New York: Charles Scribner's Sons, 1953, pp. 236-237.

[12]Gardner, Howard. Art, Mind and Brain. New York: Basic Books, Inc., 1982, pp. 49-50.

[13]Ibid.

[14]Ibid.

[15]Ibid, p. 54.

[16]Feinstein, Hermine. "Art As Visual Metaphor," Art Education, July, 1985, p. 27.

[17]Ibid.

[18]Ibid, p. 29.

[19]Samples, Bob. The Metaphoric Mind. Reading, Massachusetts: Addison-Wesley Publishing Co., 1981, p. 26.

[20]Ibid, p. 17.

[21]Ibid, p. 18.

[22]Ibid, p. 19.

[23]Gardner. Art, Mind, and Brain, p. xiii.

[24]Ibid.

[25]Ibid, p. 119.

[26]Ibid, pp. 126-127.

[27]Babcock, Barbara A. "Artifacts," International Encyclopedia of Communication, 1985. pp. 1-2.

[28]John-Steiner, p. 8.

[29]Ibid.

[30]Ibid, p. 9.

[31]Ibid.

[32]Eisner, Elliot. "On the Differences Between Scientific and Artistic Approaches to Qualitative Research, " Educational Researcher 10, April, 1981, pp. 4-9.

[33]Ibid, p. 9.

[34]Bogdan, Robert C. and Sari Knopp Bidlin. Qualitative Research for Education. Boston: Allyn and Bacon, Inc., 1982.

[35]Collier, John Jr. and Malcolm Collier. Visual Anthropology. Albuquerque: University of New Mexico Press, 1986 (Revised), p. 45.

[36]Ibid, pp. 46-47.

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